

ADR characteristics and corporate governance in the Greater China region

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Available online 23 June 2012

Abstract

We examine the relationship between firm valuation and governance mechanisms, firm characteristics, and institutional factors of the American Depository Receipts (ADRs) domiciled in the Greater China region. We find that China ADRs have the highest market-to-book value ratio followed by Hong Kong and Taiwan ADRs. It appears that Chinese firms with the poorest external governance environment stand to benefit the most from cross listing under the ADR programs. Listing in the U.S. that requires more stringent regulations and disclosure rules may strengthen the firms' governance practices and thereby enhance their firm value. Among the internal governance mechanisms, institutional ownership and insider ownership are important for firm value.

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Keywords: External governance environments; Internal governance mechanisms; ADRs; Corporate governance; Greater China region; Firm valuation

1. Introduction

Good corporate governance mechanisms are value enhancing, and their importance on firm value has long been established since the pioneering work of Jensen and Meckling (1976) in a nexus of contracts among various stakeholders. Under the rubrics of principal–agent conflicts, Shleifer and Vishny (1997) emphasize that investor protection is crucial. La Porta et al. (1998, 2000, 2002), who examine the importance of external governance around the world, show that common-law countries provide better shareholder protection than civil-law countries, and better shareholder protection is associated with higher valuation of corporate assets, and poor shareholder protection is penalized with lower valuations.

Recent research has focused on the combined determinants of corporate governance on firm performance. In particular, board

structure (Yermack, 1996; Boone et al., 2007; Linck et al., 2008), CEO characteristics (Hermalin and Weisbach, 1998; Basu et al., 2007; Brookman and Thistle, 2009), and ownership structure (Lemmon and Lins, 2003; Ali et al., 2007) have been identified as key determinants of a firm's governance practices. Firms with more independent directors and higher managerial ownership are linked to stronger governance and better firm performance. Against the backdrops of these findings, Gillan (2006) provides a comprehensive review of internal and external governance systems, and their interactions.

In this study, we contribute to the literature as we examine firm performance across various external governance regimes under the American Depository Receipts (ADRs) programs. In particular, we examine firm performance from the Greater China region, namely China, Hong Kong, and Taiwan, cross-listed in the U.S. with stronger law enforcement and investor protection (see La Porta et al., 1998). This is the case for both Level II and Level III ADRs that are required to follow the same stringent requirements on governance, disclosure requirements, and accounting standards as those of the U.S. firms, especially after the Sarbane-Oxley Act in 2002 (see Durnev and Kim, 2005; Doidge et al., 2003).¹ It could be argued that the ADRs from

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Peer review under responsibility of Africagrowth Institute.



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¹ ADRs under Level I and 144A rules are not listed on a stock exchange and do not need to comply with the same U.S. requirements. Level II ADRs use existing shares to satisfy investor demand and liquidity, and Level III ADRs are a public offering of new shares into the U.S. markets. Both Level II and Level III

the Greater China region should benefit higher market valuation from cross-listing in the U.S.

Part of our interest in examining the impact of ADRs from the Greater China region in relation to corporate governance on firm value is motivated by the contrasting external legal environment and the internal governance mechanisms (or the lack of them) among these markets. Although China's regulatory framework has evolved rapidly, its external and internal governance mechanisms remain the weakest in comparison to those of Hong Kong and Taiwan (see, e.g., Sun and Tong, 2003; Wei, 2007; Tian and Estrin, 2008).² According to La Porta et al. (1998), Taiwan that follows the civil-law regime coupled with weaker investor protection is exposed to a poorer governance environment, whereas Hong Kong with its legal origin from the common-law regime tends to enjoy stronger legal enforcement.

It follows that while firms based in the Greater China region enjoy close business ties and trades, their exposure to various governance environments should provide a fertile ground to examine the differential impact of the ADR listings on firm value. Therefore, it is hypothesized that on average, China ADRs with the weakest governance mechanisms may benefit the most in the form of higher firm valuation, followed by Taiwan and Hong Kong ADRs, respectively.

Our results confirm that China ADRs enjoy on average the highest market-to-book value ratio after controlling for governance measures and firm characteristics. It suggests that Chinese firms, moving from the poorest external governance regime to the U.S., tend to benefit the most via the ADRs experience.

However, Hong Kong ADRs, embedded with stronger governance at home, have the next highest market-to-book ratio after listing in the U.S. and Taiwan ADRs that come from a weaker governance regime, on the other hand, appear to gain the least in terms of market valuation. In our view, these results may be driven by distinct firm effects that exist among the three markets. More specifically, Hong Kong ADRs include both Hong Kong-based private-sector firms and China-based state-owned enterprises listed in Hong Kong, while Taiwan ADRs consist of firms exclusively in high-tech industries. This contrast in firm type implies that Taiwan ADRs are likely to operate in more competitive industries than their Hong Kong counterparts. As Giroud and Mueller (2011) argue that product market competition may act as a substitute for corporate governance as competitive pressure imposes discipline on managers to maximize firm value, Taiwan ADRs should, therefore, experience stronger governance. It follows that Hong Kong ADRs, which tend to be in less competitive industries based on Giroud and Mueller's proposition and thus weaker governance, should benefit more than Taiwan ADRs from the ADR listings.

Among governance measures, both institutional ownership and insider ownership are important for firm value. These results

are consistent with prior studies (e.g., McConnell and Servaes, 1990; Hartzell and Starks, 2003; Cornett et al., 2007) that higher insider ownership reduces potential agency conflicts between insiders and minority shareholders, and institutional ownership seems to play an effective monitoring role for the ADR firms. Our results complement Sun and Tong (2003) who document that share issue privatization in China is positively related to firm performance but state ownership is negatively related to firm performance.

The remainder of the paper is organized as follows. Section 2 provides an overview of the corporate governance environment in the Greater China region. Section 3 discusses sample and methodology. Empirical results are reported in Section 4 and Section 5 concludes the paper.

2. Corporate governance in the Greater China region

2.1. China

China's legal regime can be traced to German civil law, which is on average weaker than English common law in terms of investor protection (La Porta et al., 1998). Coupled with high proportions of state ownership and control for publicly listed firms, the corporate governance environment in China is arguably the weakest among the three markets in the region (see Sun and Tong, 2003; Wei, 2007; Tian and Estrin, 2008).³

Since 1990s, China has adopted a two-tier board structure that comprises the board of directors and the supervisory board to improve governance. The aim is to impose a two-layer oversight on the duty and performance of the senior management. That is, the board of directors monitors senior managers, and the supervisory board monitors and evaluates the performance of both senior managers and the board of directors. The governance of the board structure has further been strengthened after the *Code of Corporate Governance for Listed Companies in China* was introduced in 2002 that requires some degree of board independence, and qualifications and knowledge of supervisory board members.

However, Wei (2007) contends that although these governance measures were already put in place, most corporate boards are still characterized by insider control and weak independence. Tam (2002), Lin (2004), and Wang (2007) also find that supervisory boards are ineffective in playing their roles of overseeing the performance of directors and managers.

The lack of independence of directors and supervisory members is perhaps not surprising as the predecessors of Chinese listed firms are mostly state-owned enterprises (SOEs), whose managers are often appointed as directors of the newly privatized firms. The consequence is that directors are rarely independent and managers tend to dominate the governance of the board. Similarly, most supervisory members are considered insiders because they tend to come from political offices, labor unions, close friends, and allies of the senior management (Dahya et al.,

ADRs are traded on one of the three major U.S. exchanges, i.e., NYSE, AMAX, or NASDAQ.

² The core regulatory framework consists of *The Company Law* since 1993, *the Securities Law* since 1998, and *the Code of Corporate Governance for Listed Companies in China* since 2002.

³ The majority of shares outstanding in Chinese firms are non-tradable shares owned by state/local governments or their affiliated entities.

2003). Furthermore, the supervisory board has limited access to firm information and has no power in removing directors and managers (Lin, 2004; Wang, 2007).

Despite the partial privatization of SOEs, much of the ownership structure of Chinese firms remains in the hands of the state, with the majority of shares outstanding held by the state as non-tradable shares. The institutional ownership, therefore, plays a subtle but yet important role on firm performance, especially in China. Consistent with this argument, Chen et al. (2006) examine the effect of outside directors on corporate fraud and document that Chinese firms with a higher percentage of outside directors, such as institutional investors, tend to reduce corporate fraud. Zhang et al. (2001) and Xu et al. (2005) also show that foreign ownership is positively related to the efficiency of Chinese industrial firms.

2.2. Hong Kong

Unlike China, Hong Kong follows the common-law regime, or the Anglo-Saxon legal and governance system. La Porta et al. (1998) show that common-law countries provide both shareholders and creditors the strongest legal protection compared to countries of other types of legal regimes. Within the common-law countries, Hong Kong scores well above the average in efficiency of judicial system, rule of law, and corruption. Cheung et al. (2007) document that the stock market in Hong Kong exhibits similar characteristics and practices as those observed in developed economies. International rating agencies rank Hong Kong as one of the more advanced markets in the Asia-Pacific region.

However, firms in Hong Kong are characterized by less diffused ownership structure than firms in developed markets. They tend to be family owned and managed by family members as commonly found in the region. It is not unusual that the chairman of the board is also the chief executive officer of the firm. Agency conflicts may therefore arise from this particular type of ownership structure between controlling families and minority shareholders.

Since 2005, every publicly listed firm in Hong Kong is required to have a minimum of three independent non-executive directors on its board. Such requirement may mitigate agency costs of the firm as outsiders tend to play a more effective role in monitoring managers. In sum, the corporate governance's external environment and governance practices in Hong Kong are arguably the strongest in comparison to China and Taiwan.

2.3. Taiwan

Similar to China, Taiwan's legal origin comes from German civil law. La Porta et al. (1998) report that Taiwan's efficiency of judicial system and corruption are poorly ranked, compared to those countries with the same German legal origin. The overall poor investor protection in Taiwan due to its inefficient legal environment suggests that internal governance may play a more critical role in enhancing firm value than that in Hong Kong.

Following Germany's corporate governance structure, board members in a Taiwanese firm consist of both directors and

supervisors. The role of supervisors is only to monitor directors on their corporate decisions and to review and audit reports prepared for the shareholders. However, the supervisory board is not as independent as in the German two-tier system. Its members can be elected from family members of current employees and directors.

Lee and Yeh (2004) report that most controlling families in Taiwan often set up nominal investment firms to increase their controls by sending family members or their designees to the board after the investment firms are elected to the board. With these governance practices by controlling families, Young et al. (2008) discover that board independence is negatively related to managerial ownership and family control. They find that 64% of firms in Taiwan did not appoint an independent director and another 21% of firms elected only one independent director despite the mandatory requirement of two independent directors for IPO firms in 2002.

Given that legal regimes and internal governance vary considerably across the Greater China region, it could be argued that firms in Hong Kong on average tend to be associated with the strongest governance mechanisms while those in China tend to exhibit the weakest governance practices.

3. Data and variable definitions

3.1. Sample

The initial sample includes all China, Hong Kong, and Taiwan ADRs listed on the NYSE, AMEX, or NASDAQ during 2005–2010. All the ADRs in the sample belong to either Level II or III listing that requires the listing company to adopt the U.S. disclosure and governance rules. The starting year 2005 was chosen because China, Hong Kong, and Taiwan should have adopted governance measures similar to those prescribed in the Sarbanes Oxley Act since 2002. The listing information, financial and governance data of the ADRs were obtained from the Factset database, Compustat, Datastream, and SEC filings. We then eliminated ADRs that contained missing financial and governance information. The final sample includes 48 China ADRs, 18 Hong Kong ADRs, and 8 Taiwan ADRs for a total of 74 ADRs and 444 firm-year observations. Not surprisingly, China has the largest number of ADRs relative to both Hong Kong and Taiwan.

3.2. Market-to-book ratio

Following Chen et al. (2006), Harford et al. (2008), Cheung et al. (2008), and Linck et al. (2008), we use the market-to-book value (M/B) ratio to measure firm performance. Demsetz and Villalonga (2001) suggest that market-based measures such as M/B are more preferable than accounting-based profit ratios (i.e., ROA and ROE), because the former are forward looking measures of corporate performance whereas the latter are backward looking constrained by accounting standards and practices. For example, accounting rules may be applied differently to valuing tangible and intangible capitals, and taxation systems may vary with firms of different ownership structures. In contrast, M/B should fairly reflect future profitability of a firm perceived

by the market without the accounting constraints. Furthermore, M/B tends to capture the market's views on governance mechanisms as a means to reduce agency costs and enhance corporate performance.

Regarding explanatory variables, we follow extant literature and categorize metrics of governance mechanisms, firm characteristics, and institutional factors into 6 groups as follows: board structure, CEO characteristics, ownership structure, firm characteristics, legal regime dummies, and stock exchange dummies. These measures are defined in [Appendix A](#).

3.3. Board structure

We include percentage of independent directors, CEO duality, and non-executive chairman when the chairman is not an executive member of the company for measures under board structure. Independent directors, who are non-executive or non-employee directors, may play a more effective role in monitoring management to meet shareholders' expectations. [Borokhovich et al. \(1996\)](#), [Krivogorsky \(2006\)](#), and [Adams and Ferreira \(2007\)](#) show that independent directors lower monitoring costs that in turn enhances firm performance.

When the CEO is also the chairman of the board, [Fama and Jensen \(1983\)](#) contend that it may impede the effectiveness of board monitoring as the decision making and control is endowed within one individual. [Rechner and Dalton \(1991\)](#), and [Bhagat and Bolton \(2008\)](#) show that non-duality firms outperform duality firms. [Bai et al. \(2004\)](#) also report a negative relationship between CEO duality and market value for Chinese firms.

3.4. CEO characteristics

CEO characteristics refer to the number of years that a CEO has held the position. [Hermalin and Weisbach \(1991\)](#) suggest that CEO tenure does not seem to affect firm profitability for shorter CEO tenures but firm profitability declines when CEO tenure is more than 15 years. In a follow-up study, [Hermalin and Weisbach \(1998\)](#) conclude that board independence will generally decline with CEO tenure. When a CEO has worked for the company for a longer period of time, he/she tends to have more influence on the directors of the board, which is detrimental to board independence and the effectiveness of monitoring.

On the other hand, CEO tenure serves as a proxy for board leadership and measures the extent of CEO experience that may help companies to tackle difficulties and increase profits. This argument is supported by [Linck et al. \(2008\)](#) and [Brookman and Thistle \(2009\)](#), who show that CEO tenure has a positive effect on firm performance.

3.5. Ownership structure

Insiders include employees, directors, and managers who enjoy information advantage about the firm over the market. [McConnell and Servaes \(1990\)](#) find a strong curvilinear relation between corporate value and insider ownership, and a significantly positive relation between corporate value and institutional ownership.

Conversely, firms whose managers have high levels of control rights (relative to cash flow rights) experience lower stock returns. [Lemmon and Lins \(2003\)](#) show that the corporate ownership structure in eight East Asian countries plays an influential role in determining the incentives of insiders to expropriate minority shareholders during the times of declining investment opportunities. In examining the relation between ownership and market value among Chinese firms, [Bai et al. \(2004\)](#) report that high ownership concentration is positively related to market value.

Based on the above findings, we include percentage of institutional ownership and percentage of insider ownership as proxies for ownership structure. However, [McConnell and Servaes \(1990\)](#) suggest that when the percentage of insider ownership reaches a threshold, an increase in insider ownership may decrease firm value. Hence, we also include a squared term of insider ownership as a measurement of the potential non-linear relationship between percentage of insider ownership and corporate value.

3.6. Firm characteristics and institutional factors

We further include firm-specific and institutional-control variables to isolate the effect of governance measures on firm performance. They include debt-to-equity ratio, trading volume, company age, and firm size (natural log). Legal regime dummies (China, Hong Kong, and Taiwan) and stock-exchange dummies (NYSE, AMEX, and NASDAQ) are used to control for the fixed effects of legal regimes and stock exchanges.

4. Empirical results

4.1. Summary statistics

We first present the summary statistics of the sample ADRs in [Table 1](#). Panel A reports the aggregate statistics for the whole sample, and Panels B, C, and D present summary statistics for China, Hong Kong, and Taiwan, respectively.

We find that the average market-to-book (M/B) ratio is 2.79 for the whole sample, a high market valuation relative to book value. It implies that the sample ADRs with high market valuation are perhaps seeking external funding and/or increasing investor base beyond their local markets by listing on the U.S. stock exchanges. Among them, those from China enjoy the highest market-to-book ratio of 3.17, followed by those from Taiwan of 1.99 and Hong Kong of 1.96. Firms from the weakest external governance regime (i.e., China) appear to enjoy the highest market valuation relative to those from stronger governance regimes.

Consistent with the literature that CEO duality is more common in the region than in the U.S. or U.K., 31% of the sample ADRs appoint their CEOs as the chairman of the board (CEO_DUALITY) and only 4% with non-executive chairman (NONEXE_CHAIR). As discussed in [Section 2](#), firms in Hong Kong and Taiwan are more likely to be family-controlled such that CEOs who tend to be a family member also serve as chairman of the board. Although CEO duality is lower for China

Table 1
Summary statistics of the sample firms.

Variables	Mean	P25	P50	P75	St. dev.
<i>Panel A: whole sample</i>					
M/B	2.79	0.97	1.76	3.30	3.28
CEO_DUALITY	0.31	0.00	0.00	1.00	0.47
NONEXE_CHAIR	0.04	0.00	0.00	0.00	0.20
INDEP_PCT	0.24	0.00	0.27	0.42	0.24
CEO_TENURE	4.47	2.00	4.00	6.00	3.77
INST_PCT	18.68	4.19	11.12	25.48	20.79
INSIDER_PCT	47.69	21.32	43.73	74.29	28.47
DEBT_EQUITY	24.54	0.00	1.44	21.03	72.99
AGE	18.67	9.00	13.00	23.00	15.11
VOLUME	1.06	0.12	0.32	1.17	1.81
SIZE	6.62	4.93	6.12	8.35	2.50
<i>Panel B: China ADRs</i>					
M/B	3.17	1.08	1.87	3.64	3.75
CEO_DUALITY	0.27	0.00	0.00	1.00	0.45
NONEXE_CHAIR	0.01	0.00	0.00	0.00	0.12
INDEP_PCT	0.25	0.00	0.27	0.54	0.26
CEO_TENURE	4.09	2.00	4.00	6.00	3.20
INST_PCT	20.35	2.90	9.76	27.42	24.16
INSIDER_PCT	51.12	21.58	47.69	77.57	29.39
DEBT_EQUITY	25.79	0.00	0.50	18.42	85.43
AGE	18.05	9.00	12.00	20.00	16.09
VOLUME	1.12	0.10	0.31	1.27	1.84
SIZE	6.41	4.95	5.91	7.82	2.30
<i>Panel C: Hong Kong ADRs</i>					
M/B	1.96	0.61	1.46	2.61	1.83
CEO_DUALITY	0.36	0.00	0.00	1.00	0.48
NONEXE_CHAIR	0.13	0.00	0.00	0.00	0.34
INDEP_PCT	0.21	0.00	0.21	0.40	0.20
CEO_TENURE	4.68	2.00	4.00	6.00	4.55
INST_PCT	13.41	3.03	8.98	22.26	12.51
INSIDER_PCT	52.19	27.03	64.41	70.19	23.48
DEBT_EQUITY	18.89	0.00	4.53	22.49	33.30
AGE	20.77	10.00	15.00	31.00	14.84
VOLUME	0.47	0.05	0.19	0.51	0.70
SIZE	6.37	4.18	5.64	8.90	2.99
<i>Panel D: Taiwan ADRs</i>					
M/B	1.99	1.29	1.88	2.62	1.18
CEO_DUALITY	0.47	0.00	0.00	1.00	0.51
NONEXE_CHAIR	0.00	0.00	0.00	0.00	0.00
INDEP_PCT	0.26	0.00	0.33	0.38	0.20
CEO_TENURE	6.17	3.00	5.00	7.50	4.32
INST_PCT	19.26	12.49	18.32	25.48	8.17
INSIDER_PCT	20.00	7.72	18.94	36.28	12.17
DEBT_EQUITY	26.95	0.08	4.38	49.84	38.23
AGE	17.75	11.00	17.00	24.50	7.60
VOLUME	1.81	0.54	0.95	1.89	2.58
SIZE	8.28	7.06	8.81	9.56	1.97

This table presents the summary statistics of ADRs in the Greater China region during 2005–2010. M/B is the stock price per share divided by book value per share. CEO_DUALITY is a dummy variable that equals one when the CEO is also the chairman of the board, and zero otherwise. NONEXE_CHAIR is a dummy variable that equals one when the chairman of the board is not an executive member, and zero otherwise. INDEP_PCT is the percentage of independent directors on the board. CEO_TENURE is the number of years the CEO has held his/her title. INST_PCT is the number of shares held by institutional investors as a percentage of current total outstanding shares. INSIDER_PCT is the number of shares held by insiders as a percentage of current total outstanding shares. DEBT_EQUITY is the long-term debt-to-equity ratio; SIZE is the natural log of market capitalization, where the firm's market value is measured in millions of dollars. AGE is the number of years since the company starts (up to 2010). VOLUME is the 52-week average of the volume of shares traded. P25, P50, P75 denote 25th, 50th, and 75th percentile, respectively.

ADRs relative to Hong Kong and Taiwan ADRs, it remains high by western standards.

The average age of sample ADRs is more than 18 years across which Hong Kong ADRs are on average more mature (20.77 years) than their counterparts (18.05 and 17.75 years for China and Taiwan ADRs, respectively). On the contrary, the average CEO tenure is only 4.47 years, with a range from 4.09 years of China ADRs to 6.17 years of Taiwan ADRs, implying frequent CEO turnovers.

Since the regulations in all three markets require mandatory independent directors, the average percentage of independent directors is relatively high at 24%. However, the variability across these three markets appears to be small, with the highest percentage of independent directors of 26% found from Taiwan ADRs.

Insider ownership on average nears 50%, driven largely by high insider ownership of China and Hong Kong ADRs exceeding 50%. In contrast, because Taiwan ADRs are skewed towards technology-related firms characterized by more diffused ownership, the average insider ownership is relatively low of 20%.

Finally, institutional investors seem to actively invest in the ADRs. They hold an average of 18.68% of total shares outstanding. Most noticeably, China and Taiwan ADRs attract about 20% of institutional investment compared to around 13% for Hong Kong ADRs. It appears that institutional investors in recent years have shown more interest in Chinese firms. Taiwan ADRs, a cluster of high-tech firms, also appear to draw a similar level of institutional interest.

4.2. Univariate results

Table 2 presents the results of differences in means of M/B, governance measures, and firm characteristics of the China, Hong Kong, and Taiwan ADRs reported in Table 1. The first row for each variable under the “difference” column shows the statistical difference, if any, between China and Hong Kong ADRs. The second row reports the difference between Hong Kong and Taiwan ADRs while the third row presents the difference between Taiwan and China ADRs.

As shown in Table 2, China ADRs exhibit higher market valuations than Hong Kong and Taiwan ADRs. There appears, however, little difference in M/B between Hong Kong and Taiwan ADRs. We find that very few firm characteristics or internal governance measures shown in Table 2 are consistent with the differences in M/B. The legal regime where the external governance environment differs significantly between China and the other two markets remains the primary candidate to explain the extent of the firm valuation differences.

Before we conduct a multivariate regression analysis on the effect of governance measures on firm performance, we calculate the correlations between governance measures to examine potential multicollinearity problems. Table 3 presents the correlations using both Pearson (in upper diagonal) and Spearman rank (in lower diagonal) estimates.

The cross correlations between the six governance variables are generally low with the exception between institutional and insider ownership (0.54 or 0.56). These two measures are,

however, expected to contrast each other because a higher proportion of insider ownership implies a lower institutional ownership. Institutional investors also become less important in monitoring managers as agency costs tend to be lower when insiders hold a higher proportion of share ownership. To ensure regression results are robust to the potential multicollinearity problem, we run several regression estimates with various combinations of controlled variables.

4.3. Regression results

Sequel to the preliminary results, we estimate the following regression to examine the effect of governance measures on firm valuation:

$$M/B_i = \alpha + \beta_1 BS + \beta_2 CEO + \beta_3 OS + \beta_4 CC + \beta_5 LD + \beta_6 SD + \varepsilon_i \quad (1)$$

where M/B_i is the market-to-book value ratio for firm i ; BS, CEO, OS, and CC are vectors of board structure variables, CEO characteristics, ownership structure, and company characteristics, respectively; LD and SD are dummy variables for legal regimes and stock exchanges, respectively; and ε_i is the error term.

One common problem in examining the relationship between corporate governance and firm performance is the potential endogeneity effect of governance measures documented in Himmelberg et al. (1999), Cho (1998), and Bhagat and Bolton (2008). An increase in firm value may lead to better governance practices rather than what is being investigated here. To address such effect, we first use firm size, debt-to-equity ratio, and return on equity as instrumental variables for institutional ownership, and we then use the predicted institutional ownership in the regression analysis. Furthermore, we consider lagged market-to-book ratio, lagged leverage, and lagged board structure. The results using these instrumental variables are robust to those reported in this section. We also follow Black et al. (2006) and Petersen (2008) by applying adjusted standard errors due to the correlations between the same companies in different years.

Table 4 reports the regression results based on Eq. (1). Column 1 first shows the effect of board structure along with firm characteristics, legal regime dummies, and exchange dummies on the market-to-book value (M/B) ratio. Among the measures for board structure, only percentage of independent directors (INDEP_PCT) is marginally but negatively significant at the 10% level. The negative relation therefore contradicts the standard agency theory, which posits that an increase in the proportion of independent directors reduces principal–agent conflicts. Including other governance measures, however, shows that it is not an important consideration for market valuation (see column 4 in Table 4).

Similar to board structure measures, the duration of CEO tenure as shown in columns 2 and 4 carries little consequence on ADR performance. Given that the average tenure period is only 4.47 years (see Table 1), the short CEO tenure and its lack of variability across ADRs may explain why it fails to account for firm performance.

Table 2

Sample mean comparisons among China, Hong Kong, and Taiwan ADRs.

Variable	Legal regime	Mean	SE	Difference ^a	N
M/B	China ADRs	3.17	0.23	1.21***	269
	Hong Kong ADRs	1.96	0.20	−0.03	81
	Taiwan ADRs	1.99	0.18	−1.18**	45
CEO_DUALITY	China ADRs	0.27	0.03	−0.09	224
	Hong Kong ADRs	0.36	0.05	−0.11	83
	Taiwan ADRs	0.47	0.08	0.20***	36
NONEXEC_CHAIR	China ADRs	0.01	0.01	−0.12***	221
	Hong Kong ADRs	0.13	0.04	0.13**	83
	Taiwan ADRs	0.00	0.00	−0.01**	36
INDEP_PCT	China ADRs	0.25	0.02	0.04	251
	Hong Kong ADRs	0.21	0.02	−0.04	84
	Taiwan ADRs	0.26	0.03	0.01	43
CEO_TENURE	China ADRs	4.09	0.22	−0.58	213
	Hong Kong ADRs	4.68	0.48	−1.49**	90
	Taiwan ADRs	6.17	0.72	2.07***	36
INST_PCT	China ADRs	20.35	1.62	6.94***	222
	Hong Kong ADRs	13.41	1.44	−5.85***	75
	Taiwan ADRs	19.27	1.26	−1.08	42
INSIDER_PCT	China ADRs	51.12	1.87	−1.08	246
	Hong Kong ADRs	52.19	2.57	32.19***	83
	Taiwan ADRs	20.00	1.83	−31.11***	44
DEBT_EQUITY	China ADRs	25.79	5.26	6.90	264
	Hong Kong ADRs	18.89	3.75	−8.05	79
	Taiwan ADRs	26.95	5.52	1.15	48
AGE	China ADRs	18.05	0.95	−2.72	285
	Hong Kong ADRs	20.77	1.45	3.02	105
	Taiwan ADRs	17.75	1.10	−0.30	48
VOLUME	China ADRs	1.12	0.11	0.65***	280
	Hong Kong ADRs	0.47	0.07	−1.34***	88
	Taiwan ADRs	1.81	0.37	0.69**	48
SIZE	China ADRs	6.41	0.14	0.04	272
	Hong Kong ADRs	6.37	0.32	−1.91***	86
	Taiwan ADRs	8.28	0.28	1.87***	48

This table provides sample mean comparisons and *t*-test values for China, Hong Kong and Taiwan ADRs during 2005–2010.^a Reports difference in means in the following order: between China ADRs and Hong Kong ADRs, between Hong Kong ADRs and Taiwan ADRs, and between Taiwan ADRs and China ADRs.

** Significance level of 5%.

*** Significance level of 1%.

Table 3

Cross correlations of governance measures.

	CEO_DUALITY	NONEXE_CHAIR	INDEP_PCT	CEO_TENURE	INST_PCT	INSIDER_PCT
CEO_DUALITY		−0.14***	0.18***	0.27***	−0.06	0.12**
NONEXE_CHAIR	−0.15**		0.17***	−0.06	−0.14**	0.02*
INDEP_PCT	0.26***	0.20***		−0.15**	−0.03	0.05
CEO_TENURE	0.28***	−0.08	−0.17**		0.01	−0.19***
INST_PCT	−0.08	−0.22***	−0.05	0.05		−0.54***
INSIDER_PCT	0.15**	0.01	0.12*	−0.11*	−0.56***	

This table presents the correlation coefficients between the governance measures. The Pearson correlation coefficients are above the diagonal and the Spearman rank correlation coefficients are below the diagonal.

* Significance level of 10%.

** Significance level of 5%.

*** Significance level of 1%.

Table 4
Regressions of firm performance on governance measures.

	(1)	(2)	(3)	(4)
INTERCEPT	−2.49 (0.16)	−1.64 (0.36)	−4.77*** (0.00)	−4.03* (0.06)
<i>Board structure</i>				
CEO_DUALITY	0.63 (0.30)			1.99** (0.03)
NONEXE_CHAIR	0.71 (0.39)			0.08 (0.91)
INDEP_PCT	−2.22* (0.07)			−1.79 (0.24)
<i>CEO characteristics</i>				
CEO_TENURE		0.06 (0.58)		0.03 (0.85)
<i>Ownership structure</i>				
INST_PCT			0.07** (0.03)	0.10** (0.04)
INSIDER_PCT			0.08*** (0.00)	0.08** (0.04)
INSIDER_PCT ²			−0.08*** (0.00)	−0.08* (0.06)
<i>Company characteristics</i>				
DEBT_EQUITY	0.01** (0.01)	0.00** (0.02)	0.01*** (0.00)	0.01*** (0.00)
SIZE	0.61*** (0.00)	0.46*** (0.00)	0.50*** (0.00)	0.35** (0.01)
AGE	−0.00 (0.97)	−0.00 (0.55)	0.00 (0.76)	−0.01 (0.37)
VOLUME	0.04 (0.68)	−0.02 (0.80)	−0.13 (0.18)	−0.15 (0.25)
<i>Legal regime dummies</i>				
Hong Kong	−1.10** (0.03)	−1.17* (0.05)	−0.67 (0.21)	−1.13* (0.09)
Taiwan	−1.53** (0.01)	−1.27* (0.06)	−1.53** (0.01)	−2.15* (0.05)
<i>Exchange dummies</i>				
NASDAQ	3.31*** (0.00)	3.00*** (0.00)	2.92*** (0.00)	2.82*** (0.00)
AMEX	2.38** (0.04)	1.66* (0.09)	1.96*** (0.00)	1.64 (0.12)
Year dummies	Yes	Yes	Yes	Yes
N	296	293	286	184
Adj. R ²	0.22	0.20	0.24	0.24

This table presents the regressions results of firm performance as proxy by Market-to-Book ratio on governance measures. CEO_DUALITY is a dummy variable that equals one when the CEO is also the chairman of the board, and zero otherwise. NONEXE_CHAIR is a dummy variable that equals one when the chairman of the board is not an executive member, and zero otherwise. INDEP_PCT is the percentage of independent directors on the board; CEO_TENURE is the number of years the CEO has held his/her title. INST_PCT is the number of shares held by institutional investors as a percentage of the current total shares outstanding. INSIDER_PCT is the number of shares held by insiders as a percentage of the current total shares outstanding. INSIDER_PCT² is the square of the insider ownership percentage. DEBT_EQUITY is the long-term debt-to-equity ratio; SIZE is the natural log of market capitalization in millions of dollars. AGE is the number of years the company has been in existence (up to 2010); VOLUME is the 52-week average of the volume of shares traded; Legal regime dummies are dummy variables to indicate the legal regime the firm belongs to. Exchange dummies are stock exchange dummy variables where the stock is traded. *P*-values are presented in the parentheses.

* Significance level of 10%.

** Significance level of 5%.

*** Significance level of 1%.

For the effect of ownership structure, we include the percentage of institutional and insider ownership. Since the effect of insider ownership may potentially be curvilinear, we also include a squared term. Columns 3 and 4 of Table 4 show that these two governance mechanisms are positively related to the M/B ratio. While these results

are consistent with the standard finance theory that higher insider and institutional ownerships lower agency conflicts between management and minority shareholders, their relationships do not appear to be economically significant. An increase of one standard deviation in insider ownership and institutional ownership corresponds with a 2.1% and 2% change

in M/B, respectively. It suggests that their impacts on market valuation are limited.

In contrast to the limited effects of governance measures and firm characteristics, we find that legal regime explains greater variations in the M/B ratio. As shown in Table 4, China ADRs experience significantly higher M/B than both Hong Kong and Taiwan ADRs. In fact, switching from China ADRs to either Hong Kong or Taiwan ADRs on average lowers market equity relative to book equity by more than a factor of 1. As China has the weakest governance environment in the Greater China region, the Chinese firms under the ADR programs have the most to benefit from listing in the U.S.

However, Hong Kong ADRs enjoy a higher market valuation than Taiwan ADRs after listing in the U.S. This result appears to contradict the hypothesis that ADRs from a weaker governance regime should benefit more from the ADR programs. However, when we investigate firm types between Hong Kong and Taiwan ADRs, we found that Hong Kong ADRs are made up of not only Hong Kong-based firms but also China-based state-owned enterprises listed in Hong Kong, whereas all Taiwan ADRs consist of firms in high-tech industries. The apparent firm effects suggest that Taiwan ADRs are likely to operate in more competitive industries compared to Hong Kong ADRs. According to Giroud and Mueller (2011), Taiwan ADRs should on average experience stronger governance because product market competition serves as a good substitute for corporate governance. Consequently, Hong Kong ADRs with weaker governance on average tend to gain more from the ADR listings.

5. Conclusion

In their seminal papers on corporate governance, La Porta et al. (1998, 2000, 2002) show that external governance regime is an important determinant for firm performance. Stronger governance that provides better investor protection leads to higher firm value. We extend their studies by comparing the performance of firms from the Greater China region that cross-list in the U.S. under the ADR programs. In particular, we compare firm valuation between ADRs domiciled in China, Hong Kong, and Taiwan, which although share close business and trade ties differ significantly in their external governance backgrounds.

Consistent with the extant literature, we find that Chinese firms with the weakest governance environment tend to gain the most under the ADR programs after subject to the stringent regulations and disclosure rules in the U.S. In comparison, the ADRs from Hong Kong and Taiwan experience relatively lower market valuation due to their stronger external governance environments at home.

Despite the importance of some firm characteristics and internal governance mechanisms on firm value, our results suggest that the impact of external governance backgrounds far outweighs those within the firms. They imply that policy efforts should be directed more at the macro level than at the firm level as the former appears to be more influential in lowering principal–agent conflicts.

Appendix A.

Variables are classified into seven categories: performance measure, board structure, CEO characteristics, ownership structure, company characteristics, legal regime dummies, and stock exchange dummies.

Variable	Definition
<i>Performance measure</i>	
M/B	Price per share of common stock divided by book value per share of common stock, measured in percentage
<i>Board structure</i>	
CEO_DUALITY	Dummy variable equals one when the CEO is also the chairman of the board, and zero otherwise
NONEXE_CHAIR	Dummy variable equals one when the chairman of the board is not an executive member, and zero otherwise
INDEP_PCT	The percentage of independent directors in the board
<i>CEO characteristics</i>	
CEO_TENURE	The number of years the CEO has held his/her title
<i>Ownership structure</i>	
INST_PCT	The number of shares held by institutional investors as a percentage of the current total shares outstanding
INSIDER_PCT	The number of shares held by insiders as a percentage of the current total shares outstanding
<i>Company characteristics</i>	
DEBT_EQUITY	Debt to equity ratios, which is long term debt divided by total equity measured in percentage
SIZE	The natural log of market cap, where the market cap is measured in millions of U.S. dollars
AGE	The number of years the company has been in existence (up to 2010)
VOLUME	The 52-week average of the volume of shares traded, which is measured in millions of shares
<i>Legal regime dummies</i>	
China	Dummy variable to indicate which legal regime a firm is from, one is China and zero otherwise
Hong Kong	Dummy variable to indicate which legal regime a firm is from, one is Hong Kong and zero otherwise
Taiwan	Dummy variable to indicate which legal regime a firm is from, one is Taiwan and zero otherwise
<i>Stock exchange dummies</i>	
NYSE	Dummy variable which equals one if a firm's stock is listed on NYSE, and zero otherwise
AMEX	Dummy variable which equals one if a firm's stock is listed on AMEX, and zero otherwise
NASDAQ	Dummy variable which equals one if a firm's stock is listed on NASDAQ, and zero otherwise

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